ABSTRACT

In calculating motion between two images, a single channel image may be generated for each image based on measurement of a desired characteristic of those images. Given a desired characteristic (such as edge strength or edge magnitude) in an image, a function measures the strength of the desired characteristic in a region around a pixel in an image. A range of values can represent the likelihood, or measure of confidence, of the occurrence of the desired characteristic in the region around the pixel. Thus, each pixel in the single channel image has a value from the range of values that is determined according to a function. This function operates on a neighborhood in the input image that corresponds to the pixel in the single channel image, and measures the likelihood of occurrence of, or strength of, the desired characteristic in that neighborhood. Two single channel images generated from two input images are analyzed to provide a motion estimate that indicates how the location of characteristics in the images changes from one image to the next image. If the desired characteristic is an edge magnitude or edge strength, then the motion is effectively estimated using a constant edge constraint.